EVALUATION OF THE HCFA ALCOHOLISM SERVICES DEMONSTRATION

Deliverable No. 8

Final Evaluation Design

EXECUTIVE SUMMARY

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I. INTRODUCTION AND OVERVIEW OF HASD PROJECT

American health care costs subsidized by Medicare, Medicaid and private health insurance have grown ten-fold over the past two decades, *from $27 billion in 1960* to $287 billion in 1981. The health care bill represents nearly 10 percent of the country's Gross National Product. The cost of an average stay in the hospital has risen from $670 in 1971 to $2,119 in 1981. Overall health care expenditures are doubling every six to eight years, thereby contributing substantially to the inflationary forces in the nation's economy.

As Congress deliberates on where and how to cut the projected FY1984 Federal deficit, major and costly Federal programs like Medicare and Medicaid *are* receiving close scrutiny. Alternatives to costly hospitalization and physician services are under consideration. The HCFA Alcoholism Services Demonstration (HASD) tests one such alternative which allows reimbursement for alcoholism care in non-hospital based settings and in clinics without physician services. The HASD corresponds to the growing trend of state legislatures enacting bills requiring health insurers to provide or offer coverage for alcoholism service in non-hospital based settings by non-medical staff.

Third-Party Reimbursement' for Treatment Services

Funding for the development of a canprehensive and effective alcoholism treatment system has come from Several major sources: Federal, state and local taxes/appropriations; third-party reimbursements from public or private payors; direct client fees; and other contributions or grants.

Taxpayers' monies in the form of direct Federal grants or formula funds returned to the states were initially used by NIAAA to launch a treatment system that was expected to become self-sustaining within a relatively short period of time. Supplemental or additional monies were also sought from state and 1 ocal sources. Direct client fees and third party reimbursements, until recently, were not substantial funding sources for most alcoholism provider facilities. This has been in sharp contrast to most other health care services which are reimbursed by such payors.

Concurrent with NIAAA's efforts in health insurance initiatives, such as the Model Benefit Study with Blue Cross and Aetna *coverage* for Federal employees, state legislatures were enacting laws on health *insurance coverage* for alcoholism services. Some legislators in many states have recognized that alcoholism constitutes a serious health and social problem. Others have more recently become aware that their constituents are often not adequate1 y protected against the unforeseeable health and economic risks associated with this illness. Thus, by 1981, 33 states enacted laws that mandate or require the option of alcoholism treatment coverage by health insurers in their states.

These laws do not apply to Medicare or Medicaid *coverage* and generally include the accepted medical definition of alcoholism as a disease.. They acknowledge that previous health insurance contracts have often failed to provide adequate benefits for alcoholism treatment, and that the best

interests of the state's citizens require that health insurance coverage be provided for treatment of alcoholism. Laws that provide for such coverage by insurers are intended to facilitate. early intervention into the illness to prevent further deterioration of the person, and to result in financial and human savings for the individual citizen, insurer and state.

Interest in initiating or expanding alcoholism benefit. coverage through private health insurance has been increasing over the past decade. This development parallels the initiation and expansion of alcoholism education, prevention and treatment programs in states. Thus, the HCFA Alcoholism Services Demonstration is consistent with other third-party reimbursement activity in the alcoholism field.

Current' Status of' Medicare. and Medicaid Alcoholism Services Reimbursement

Medicare

In a 1978 NIAAA report analyzing the adequacy of current Medicare coverage (Title XVIII of the Social Security Act) for alcohol problems, it was estimated that approximately 10 percent of alcoholics were elderly and that 85 percent of these were not receiving any type of service related to their alcohol problems (NIAAA, 1978).

Medicare categorizes alcoholism as a mental disorder. Under Part A coverage, inpatient psychiatric hospital care is limited to 190 lifetime days. There is no such limit on care in a general hospital under a psychiatric diagnosis. Consequently, a client with a primary psychiatric diagnosis of alcoholism has unlimited inpatient coverage if cared for in a general hospital, and 190 lifetime days if cared for in a psychiatric hospital. In a general hospital, a combined 21 day limitation is used for alcoholism detoxification and rehabilitation. Part B is somewhat complex in its reimbursement formula, but generally imposes substantial coinsurance requirements for physician services and annual maximum payments for outpatient mental health care, including alcohol services (U.S. Department of Health and Human Services, 1980). Covered care is primarily provided in inpatient and outpatient hospital settings, physician offices, and certain freestanding physician-directed clinics.

The Health Care Financing Administration (HCFA), in fiscal year 1979, estimated that the Medicare program paid approximately $100 million for the treatment of alcohol-based disorders and alcoholism. Of this total, $90 million was for institutional care, and the remainder was an estimate of the amount paid to physicians for their services.

Medicaid

The Medicaid program (Title XIX of the Social Security Act), which all states except Arizona have enacted, provides medical assistance to low-income individuals. All persons in the Aid to Families with Dependent Children (AFDC) programs, as well as aged, blind, and disabled persons receiving Supplemental Security Income (SSI) are eligible unless their state has more restrictive standards. Treatment costs are shared by the states and the Federal government, and each state, according to Federal statute, must provide

certain basic health services. Expansion of these basic benefits is up to each state's discretion. Covered care is primarily provided in inpatient and outpatient hospital settings and by physicians.

A major limitation under the Medicaid program is the exclusion of Federal financial participation for care in psychiatric institutions for persons between the ages of 22 and 64. Also, because services for alcohol problems are not specifically mentioned in the Medicaid statutes, the states have great flexibility in determining whether treatment should be excluded or included. For example, the state has the option of whether or not to include clinic services or rehabilitation services in its benefit package, and can further define the scope of these optional benefits. The majority of Medicaid state plans have been silent on the issue of coverage for alcoholism treatment services.

Summary

Essentially, Medicare coverage of alcoholism services is restricted to hospital-based treatment programs or those with physician supervision. This restriction has been identified as a significant barrier to Medicare beneficiaries accessing the care they need, and a primary reason for the escalating Medicare health care bill for alcoholism and alcohol-related diseases (NIAAA, 1978). Similarly, Medicaid coverage for alcoholism services is Primarily offered in physician involved treatment settings. As a result, the low-income are believed to be significantly underserved, and the relatively small proportion who do receive treatment are doing so at substantial cost to the Medicaid program.

It is within the context of attempting to slow the rising cost of alcoholism services and providing greater access to early treatment of alcohol abuse problems among our nation's needy that the HCFA Alcoholism Services Demonstration has evolved. Though modest in scale, this effort represents a significant undertaking for NIAAA and HCFA in reimbursing the treatment of alcohol abuse and alcoholism. For HCFA and state Medicaid Agencies, the HASD may offer insight and direction for legislative proposals to address alcohol abuse problems of the nation's elderly, disabled, and needy within a wider range of treatment environments reflective of true client need. Environments which include hospital and freestanding providers may enhance the cost efficiency of alcoholism treatment.

Overview of' HASD Project

Project' Goals

The HCFA Alcoholism Services Demonstration (HASD) is intended to demonstrate cost savings expected from providing alcoholism services to Medicare and Medicaid eligibles in freestanding residential alcohol treatment centers, including, hal fway houses, and freestanding outpatient alcohol treatment centers. It is also intended to test the feasibility of utilizing personnel, in addition to physicians, in the treatment of alcoholism (e.g., alcoholism counselors).

The following are the goals of the HASD demonstration grant program:

Goal A: To test the potential value of providing payment for alcoholism treatment services to Medicare beneficiaries and Medicaid recipients in freestanding inpatient and outpatient centers and halfway houses.

Goal B: To evaluate the performance of nonphysician personnel providing alcoholism treatment in the above settings.

Goal C: To test means of developing the awareness and involvement of beneficiaries and recipients in alcoholism treatment services.

Goal D: To assess the cost and effectiveness of these alcoholism treatment services as compared to: (1) matched site and population cohorts not in the demonstration areas; (2) retrospective data; and (3) related studies.

Goal E: To establish a basis for legislative, regulatory, and policy changes that will result in the most cost effective alcoholism treatment for Medicare beneficiaries and Medicaid recipients.

Approach

The Health Care Financing Administration sought to ensure that the alcoholism treatment providers chosen for funding under this program represent an adequate base for demonstration and research purposes. The HASD program will test as lower-cost alternatives the use of three types of providers in the Medicare and Medicaid programs: 1) freestanding inpatient alcoholism treatment providers; 2) freestanding outpatient alcoholism treatment providers, and 3) therapeutic services in halfway houses. The halfway house is included as an integral type of provider in this demonstration because of the crucial role it plays as a link with outpatient providers.

It is the intent of the HASD program to utilize existing alcoholism providers that have the necessary resources to provide basic services required by alcoholic persons and that have the potential for including in their service capacity the Medicare and/or Medicaid eligible populations. The HASD program does not fund the development of new alcoholism treatment providers.

The demonstration will be conducted within selected geographic sites in six States: Connecticut, Illinois, Michigan, New Jersey, New York, and Oklahoma. It is intended to operate for a maximum of four (4) full years The first 6 to 9 months have been used for development of technical capacity for billing and reimbursement arrangements for providers, and the installation of the evaluation component. Six grantees covering approximate7 y 75 demonstration providers are participating in the HASD program. Each grantee has included from 12 to 18 providers, in an approximate ratio (1:2:3) of 1 freestanding inpatient center to 2 halfway houses to 3 freestanding outpatient centers. This target distribution is intended to emphasize the priority given in this demonstration to lower cost settings.

Applicants were encouraged to include both Medicare and Medicaid coverage in their proposed demonstrations. However, the applicants had the option of including Medicare only or Medicaid only. In the State of Oklahoma, the Medicaid agency is not participating in the demonstration. In Connecticut, Medicaid did not participate during year one, and its future participation is in question.

Under this demonstration the uniform benefits for Medicare and Medicaid demonstration providers are:

- Alcohol Detoxification Services - No limit on required episodes of treatment.
- Inpatient Alcoholism Treatment Services - Up to 30 days per calendar year, including care in a halfway house.
- Outpatient Alcoholism Treatment Services - Up to 45 visits per calendar year.
- Halfway Houses - Depending on qualifications and client need, could render one or all of the above servicesto residents.

The HASD sought to include reservation American Indians and reservation providers, or a sizeable American Indian/Alaskan Native (AI/AN) population. One objective was to fund at least one application that would demonstrate the implementation of the objectives of this grant program in relation to AI/AN Population and AI/AN providers. One grantee, the American Indian Institute at the University of Oklahoma, has selected the State's American Indian population as the target group for the services to be provided under the demonstration.

II. OVERVIEW OF EVALUATION DESIGN

The design and methodology of the HASD evaluation is quite complex. The various research priorities to be addressed require many different types of data as well as a number of different types of comparisons. In addition, data availability and cost considerations have had major influences on the particular designs chosen to examine the individual research questions. Whenever possible, even when addressing very different substantive issues, consistent approaches have been taken relative to the states, providers and clients studied as well as in the timeframes employed in the various comparisons. Nevertheless, substantial variations exist in major design and methodological features of LJA's approach to the different research priority areas. These variations are necessary accommodations to the structure of the demonstration. They, in turn, enhance the evaluation design's efficiency.

The most significant variations built into the different components of the HASD evaluation include:

1. Study Focus. The evaluation focusses on process issues through case study site visits and descriptive reports on changes in provider operations. It also focusses on impact issues through analytical assessments of utilization, costs, and client outcomes.

2. States Included. Portions of the evaluation plan are addressed by studying all of the demonstration states. Other portions are addressed through a more in-depth two state substudy.

3. Types of Providers. Some parts of the study involve cunparisons between demonstration freestanding providers and traditional hospital-based providers. Other parts involve three-way contrasts, including the comparison freestanding providers as well.

4. Type of Design. Although all of the designs are quasi-experimental and involve comparisons between nonequivalent groups, they differ in whether contrasts are made in both the baseline and waiver periods (pre/post designs) or only in the waiver period (post-only designs),

5. Units of Analysis. For some parts of the study, the grantee is the unit being described and studied. In others, the focus is on data at the provider level. In the remainder, analysis focusses directly on treatment clients themselves.

6. Types of Data Collection. Several types of primary data collection methods will be employed in various portions of the study, including site visits, interviews and systematic abstraction of information from existing hard-copy records. In addition, diverse secondary data will be collected from automated intake, program enrollment and medical claims files and from hard-copy cost reports.

7. Sources of Data. Data will be gathered from a broad range of sources, including grantees, providers, clients, referral sources, state agencies and HCFA. Different sources and data elements are used to address each of the specific research priorities.

In addition to these principal sources of design variation, the research plan also includes many other dimensions of variability. Among the more important of these are: 1) the timing of data collection, whether on-going or periodic and, if periodic, at what intervals; 2) the populations included, whether Medicare only or Medicare and Medicaid and, in each case, whether treatment clients only or a broader comparison group of program eligibles as we77; 3) the types of services considered, inpatient or outpatient, detoxification or rehabilitation; and 4) the client subsamples examined, whether all clients during the demonstration period or only some subset of clients (e.g., all those seen within a given period or a random sample of these).

This chapter is intended to provide the reader with a simplified overview of both the commonalities and the variations inherent in the HASD research plan. It lays out the principal features of the research design and methodology and briefly explains the applicability of these features addressing each of the priority research topics. More detailed summaries of the approaches taken for each priority area are provided in Appendix A.

Research Priorities

Six priority research areas define the scope of the HASD evaluation. Briefly stated they are:

Priority #1: How the demonstration providers compare with traditional hospital-based providers on utilization, costs, and outcome associated with alcoholism treatment?

Priority #2: What is the impact of alcoholism treatment through the demonstration on future health care utilization and costs?

Priority #4: To what extent does utilization expand or shift between demonstration and traditional hospital-based providers?

Priority #5: What is the effect of the demonstration on provider operations?

Priority #6: What is the impact of prospective versus cost reimbursement on the use and costs of services among demonstration providers?

Research hypotheses and questions associated with these priority areas are listed in Exhibit 1.

Exhibit 1

Research Hypotheses and Questions by Priority Area

PRIORITY #1: Utilization and Cost Hypotheses

H 1a: The number of inpatient days per unit of time after treatment initiation will be greater in traditional hospital-based than in freestanding demonstration settings.

H 1b: The number of outpatient visits per unit of time after treatment initiation will be greater in freestanding demonstration than in traditional hospital-based settings.

H 1c: The utilization of laboratory, pharmacy, and medical supplies per unit of time after treatment initiation will be *greater* in traditional hospital-based than in freestanding demonstration settings.

H 1d: The *number* of visits for counseling as opposed to medical services (including physical exams, drug prescribing) will be greater in freestanding demonstration than in traditional hospital-based settings.

H 1e: The number of visits to physicians (including psychiatrists) will be greater in traditional hospital-based than in freestanding demonstration settings.

H If: Per *user costs per* unit of time after treatment initiation will be less for those receiving care from freestanding demonstration versus traditional hospital-based providers.

H 1g: Total inpatient costs per unit of time after treatment initiation will be greater among traditional hospital-based than demonstration providers.

H 1h: Inpatient costs per day in freestanding demonstration settings will be equal to or less than those in traditional hospital-based settings.

H 1i: Inpatient costs for laboratory, pharmacy, medical supply, and physicians visits will be greater in traditional hospital-based than in freestanding demonstration settings.

H 1j: Total outpatient costs per unit of time after treatment initiation will be greater among freestanding demonstration than traditional hospital-based providers.

H 1k: Per visit outpatient costs in freestanding demonstration settings will be equal *to or* less than those in traditional hospital-based settings.

H 11: Outpatient costs for medical visits will be greater in traditional hospital-based than in freestanding demonstrati *on* settfngs.

Exhibit 1 Cont'd

PRIORITY # 2: Total Health Cost and Utilization Hypotheses

H 2a: Tothl **Medicare/Medicaid** reimbursed health care costs for those provided treatment for alcoholism by demonstration providers will be **lower** than for those who remain untreated.

H 2b: Total **Medicare/Medicaid** reimbursed health care costs for those provided treatment by demonstration providers will be the same as total health care costs for those provfded treatment by traditional hospital-based providers.

PRIORITY # 3: Quality of Care: Client **Outcome** hypotheses

H **3a:** There is no difference in treatment completion rates for inpatient rehabilitation between hospital-based and demonstration providers.

H 3b: There is no difference in treatment completion rates for outpatient services between hospital-based and demonstration providers.

H **3c:** There will be no difference in recidivsn rates between clients of hospital-based and **demontration** providers.

H 3d: There will be no difference in the time periods from treatment to return to drinking between clients of hospital-based and demonstration providers.

H 3e: There will be no difference in drinking level between clients of hospital-based and demonstration providers.

H 3f: There will be no difference in number of arrests between clients of hospital-based and demonstration providers

H **3g:** There will be no difference in types of arrests between clients of hospital-based and demonstration providers.

H 3h: There will be no difference in employment status of clients between hospital-based and demonstration providers.

H 3i: There will be no difference **in** the reported level of improvement in social/vocational functioning between clients of hospital-based and demonstration providers.

H 3j: There will be no difference in the reported level of improvement **in** emotional **functioning** between clients of hospital-based and demonstration providers.

H 3k: There will be no difference in mortality rates between clients of hospital-based and demonstration providers.

Exhibit 1 Cont'd

PRIORITY #3: Quality of Care: Provider Structure Research Questfons

Q 3a: What changes, if any, have occurred in the supervisory relations of physician and non-physician personnel among demonstration providers during the demonstration?

Q 3b: What are the quality assurance mechanisms in place among demonstration providers?

Q 3c: Have the quality assurance mechanisms changed concurrent with the demonstration?

PRIORITY #4: Expansion/Substitution Hypotheses

H 4a: Increases in the use of Medicare and Medicaid-covered alcoholism treatment services at the freestanding demonstration sites will be offset by decreases at hospital-based providers (substitition effect).

H 4b: Increases in the use of Medicare and Medicaid-covered alcoholism treatment services at demonstration providers will not be offset by decreases at hospital-based providers (expansion effect), and either:

1. the new clients in the system will be drawn from previously nonreimbursed settings, e.g., clients come fran other freestanding alcoholism treatment centers or they were clients of the demonstration site even before the demonstration, or would have gone to the demonstration site even in the absence of the waiver, or

ii. the new clients in the system would not have received treatment in any setting if it were not for the demonstration waiver.

H 4c: Increases in the use of Medicare and Medicaid-covered alcoholism treatment services at the demonstration providers will not be offset by decreases at hospital-based providers (expansion effect), and either:

i. both hospital-based and demonstration providers are drawing clients from the same population in the waiver period as in the demonstration period; i.e., the clients of demonstration and hospital-based providers are not less severely ill in the waiver period than in the baseline period, or

ii. the clients of hospital-based providers represent a new, less severely ill population in the waiver period, or

iii. the clients of demonstration providers represent a new, less severely ill population in the waiver period.

Exhibit 1 Cont'd

PRIORITY # 5: Provider Operations Research Questions

Q5a: To what extent have changes occurred in the age, gender, racial/ethnic, and income profiles of all clients served by demonstration providers?

Q 5b: Hw has the proportion of third-party reimbursement revenue of demonstration providers changed between the baseline and waiver periods?.

Q 5c: Hw does the proportion of third-party reimbursement revenue of demonstration providers compare with that of caaparison providers during the waiver period?

Q 5d: What kind of beneficiary awareness programs are used by demonstration providers?

PRIORITY # 6 Reimbursement Methodology Research Questions

Q 6a: What is the relationship between prospective versus retrospective *cost* reimbursement rate setting methodologies among demonstration Providers and their actual service costs?

Q 6b: What is the relationship between prospective versus retrospective cost reimbursement rate setting methodologies among providers and their direct care staff characteristics?

Principal Design Features

This section provides a brief discussion of each of the principal design features identified above. In-depth descriptions of the research plan appear in the next six chapters, which are organized according to the above research priorities. A subsequent exhibit is intended as a guide to the reader in considering both the overview presentation and the in-depth discussions. It presents, in schematic form, the ways in which the principal design features vary as a function of the individual research priorities being addressed (see Exhibit 2). Aspects of the design which are addressed principally by primary data collection in the two state substudy are denoted with a check mark (✓). Design parameters associated with research priorities addressed with secondary data from all states are indicated with plus marks (+) across the exhibit. As is evident, most of the priority areas will have some aspect addressed at both the genera? and more detailed substudy levels.

For purposes of illustrating how to read this chart, it may be useful to "walk through" the first research priority area as it is presented in Exhibit 2. That priority area reads:

> How do demonstration providers compare with traditional hospital-based providers on utilization and costs associated with alcoholism treatment?

This research priority is addressed almost entirely through primary data collection in the two state substudy, as indicated by the series of check marks. Following the check marks across, we see that Research Priority #1 will be studied in two states, using demonstration and hospital-based providers. The analysis will be for the waiver period only, client-specific data will be analyzed and client records, provider records, and state Medicaid and OSDM data files will serve as data sources. Data collection will be periodic in all phases of the study, and all service types will be included in addressing this priority. The demonstration providers will be compared only with hospital-based providers, and both Medicare and Medicaid populations will be included in the analysis.

Study Focus. The HASD evaluation design examines the demonstration from both process and impact perspectives. That is, it is concerned with assessing how the demonstration itself is implemented in the grantee states, and the influences of the demonstration on the "normal" operations of grantee agencies, on treatment providers, on related community support agencies and, in turn, on client use, costs, and outcome. It will be important to learn about the context in which the demonstration providers operate, and their interrelationships with other freestanding units, hospital-based centers, referral networks and the community at large. Site visits provide the necessary qualitative and quantitative data to gain a sound working knowledge of the demonstration providers' individual systems. In turn, this information will be particularly useful in qualifying findings of impact where more than one alternate explanation may be plausible.

Exhibit 2

Design Parameters

RESEARCH PRIORITY / DESIGN PARAMETERS	States Included: 2 States	States Included: All States	Provider Type: Demonstration	Provider Type: Comparison	Provider Type: Hospital-Based	Basic Design: Baseline/Waiver	Basic Design: Waiver Only	Primary Unit of Analysis: Client	Primary Unit of Analysis: Provider	Primary Unit of Analysis: Grantee	Type and Source of Data: P:Client Survey	Type and Source of Data: P:Provider Site Visit	Type and Source of Data: P:Grantee Site Visit	Type and Source of Data: P:Referral Source Int.	Type and Source of Data: S:Client Records	Type and Source of Data: S:Provider Records	Type and Source of Data: S:Medicaid Agency	Type and Source of Data: S:Alcoholism Authority	Type and Source of Data: S:HCFA ODR	Type and Source of Data: S:HCFA OSDM	Frequency of Data Collection: On-Going	Frequency of Data Collection: Periodic	Phase When Data are Collected: Phase II	Phase When Data are Collected: Phase III	Phase When Data are Collected: Phase IV	Service Types to be Compared: Inpatient Detox	Service Types to be Compared: Outpatient Detix	Service Types to be Compared: Inpatient Rehab	Service Types to be Compared: Outpatient Rehab	Groups to be Compared: Demonstration	Groups to be Compared: Comparison	Groups to be Compared: Hospital-Based	Groups to be Compared: Population Sample	Payor Population Included: Medicare	Payor Population Included: Medicaid	Payor Population Included: Other
1. How do the demonstration providers compare with traditional hospital-based providers on utilization and costs associated with alcoholism treatment?	✓		✓		✓		✓	✓							✓	✓	✓			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		
2. What is the impact of alcoholism treatment through the demonstration on future health care utilization and costs?	✓	+	✓ +		✓	✓ +		✓ +								✓ +	✓ +			✓		✓ +	✓ +	✓ +	✓ +					✓ +		✓ +	✓	✓ +	
3. Do the demonstration providers provide adequate quality of care?																																				
a. Client Outcomes	✓	+	✓ +		✓		✓ +	✓ +			✓				✓	✓		+				✓ +	✓ +	✓ +	✓ +	+	+	✓	✓	✓ +		✓	✓	✓ +	+
b. Provider Structure	✓	+	✓ +	✓ +	✓		✓ +		✓ +		✓ +	✓ +				✓ +		✓ +				✓ +	✓ +	✓ +	✓ +	✓ +				✓ +	✓ +	✓			

✓: Parameters apply to two state substudy

+: Parameters apply to overa study

Exhibit 2 Cont'd
Design Parameters

RESEARCH PRIORITY \ DESIGN PARAMETERS	States Included: 2 States	States Included: All States	Provider Type: Demonstration	Provider Type: Comparison	Provider Type: Hospital-Based	Basic Design: Baseline/Waiver	Basic Design: Waiver Only	Primary Unit of Analysis: Client	Primary Unit of Analysis: Provider	Primary Unit of Analysis: Grantee	Type and Source of Data (P: Primary Data; S: Secondary Data): P:Client Survey	P:Provider Site Visit	P:Grantee Site Visit	P:Referral Source Int.	S:Client Records	S:Provider Records	S:Medicaid Agency	S:Alcoholism Authority	S:HCFA ODR	S:HCFA OSDM	Frequency of Data Collection: On-Going	Periodic	Phase When Data are Collected: Phase II	Phase III	Phase IV	Service Types to be Compared: Inpatient Detox	Outpatient Detox	Inpatient Rehab	Outpatient Rehab	Groups to be Compared: Demonstration	Comparison	Hospital-Based	Payor Population Included: Population Sample	Medicare	Medicaid	Other
4. To what extent does utilization expand or shift between demonstration and hospital-based providers?	✓		✓	✓	✓	✓		✓			✓		✓	✓		✓						✓		✓	✓					✓		✓		✓	✓	
5. What is the impact of the demonstration on provider operations?	✓		✓	✓	✓	✓			✓	✓	✓		✓	✓		✓		✓	✓			✓	✓	✓	✓					✓	✓	✓				
		+	+	+		+			+	+	+		+	+		+		+	+			+	+	+	+					+	+					
6. What is the impact of prospective versus cost reimbursement on the use and costs of services among demonstration providers?	DESIGN PARAMETERS TO BE DEFINED DURING PHASE II.																																			

✓: Parameters apply to two state substudy

+: Parameters apply to overall study

There will no doubt be on going political, economic, and sociodemographic changes during the demonstration period which will influence interpretation of the study's interim and final findings. The case study component of the evaluation is designed to keep project staff and HCFA/NIAAA abreast of these contextual changes and their potential impact on the demonstration effects. Site visits will be conducted annually to grantee States during the term of the demonstration in order to appropriately understand the context in which the impact assessment is made. All of the six states will be site-visited.

The case study canponent of the evaluation is designed to provide an on-site assessment of how the demonstration is being implemented. This canponent lends itself to evaluating the process of the demonstration relative to the stated goals and objective of the overall project. The emphasis here is on site-specific data on the operations of each grantee and a sample of its providers which complement the standardized impact information to be collected on all providers.

The impact assessment itself focusses on effects on service utilization, costs, and client outcome. These issues reflect the more self-evident objectives of the evaluation. The main point is that the findings resulting from eitherthe process or impact assessment perspectives alone are not sufficient to satisfy the research'and policy needs of this study. Both of these perspectives need to be integrated in examining the research priorities of the evaluation.

States Included. The evaluation design is intended to address the research priorities at canplementary levels of depth and rigor. As is evident is Exhibit 2, the design examines certain issues on a broad plane across all providers in the six states HASD project. However, it also embraces a rather comprehensive treatment of utilization, cost, and client outcome in a substudy sample of two states.

The general analyses across all states are necessary to understand the broad impacts of the demonstration on clients and providers of care. However, they are not done in sufficient depth to gain a complete understanding of demonstration effects. The detailed substudy covering two states will be much more extensive for those states, but would be prohibitively expensive if the same amount of depth was provided in all six states.

This two level approach makes maximum use of existing information systems to address the broad concerns of the project. It also selectively targets primary data collection in the substudy to obtain a more complete understanding of the demonstration's impact.

Provider Types. Three types of providers are included in various portions Of the HASD evaluation: demonstration freestanding providers, comparison freestanding providers, and traditional hospital-based providers. These three types of providers may be distinguished as follows:

1. Demonstration providers are those which receive reimbursement under the demonstration for the treatment services rendered to Medicare and Medicaid clients, subject to the limits of established ODR service definitions. Included are freestanding inpatient programs (detox and

rehabilitation), halfway houses, and outpatient programs. These providers are the "treatment" group in the evaluation effort, and are expected to reveal the impact of the demonstration on utilization, costs, revenues, and other aspects discussed in the evaluation priorities.

2. Comparison providers are also freestanding facilities, like the demonstration providers with which they are to be compared. These providers have been selected by the evaluation project staff in consultation with the grantees and Project Officers utilizing information from two sources. First, using data from the 1980 National Drug and Alcohol Treatment Utilization Survey (NDATUS), treatment facilities were identified in the comparison geographic areas selected by the grantees and approved by HCFA. These state by state rosters were reduced by eliminating hospital-based, jail and DWI (driving while intoxicated) programs. The second source of information used in the determination of comparison providers was the State Alcoholism Authority (SAA) of each state. These offices provided information on the facilities which were reasonably matched against the characteristics of the demonstration providers. The criteria for matching in descending order of importance were:

   a. Type of treatment services provided,

   b. treatment model used (medical/nonmedical),

   c. client population characteristics,

   d. urban/suburban/rural location, and

   e. client capacity.

In cases where all of the relevant information was not available for certain providers, or they did not match on all criteria, the most important characteristic(s) available was used to determine the appropriate cunparison providers.

The comparison providers in each state are not matched on a one-to-one basis with the demonstration providers. The number of comparison providers is smaller -- about one-third of the number of demonstration providers. Comparisons were matched to reflect a similar overall group profile of the demonstration providers in the state, rather than the full characteristics of any one of the demonstration providers.

The comparison providers serve as one "control" group in the evaluation effort, and will be compared against the demonstration providers in order to determine whether the observed changes are due to the demonstration itself, or merely reflect ongoing changes in the alcoholism field among freestanding treatment facilities. While the comparison providers were selected to 'provide as close a match as possible to the demonstration providers, it is not possible to be certain that all potentially significant independent variables have been controlled. Consequently, generalizations based on the study findings will need to be tempered by the generalization that randomization was not feasible.

With the exception of Oklahoma, all grantee states have designated comparison providers. In Oklahoma, no group of comparison freestanding providers could be identified in Oklahana which had sufficiently comparable characteristics to those in the state's demonstration providers.

3. Hospital-based providers are established inpatient and outpatient programs which will be used as an additional comparison group in the evaluation. These programs will allow for a comparison of utilization, cost, and client outcome data between demonstration freestanding and hospital-based programs. Such a comparison will aid in the demonstration of cost savings to be realized by the Medicare and Medicaid programs if the use of freestanding facilities with reimbursement- becomes implemented nationwide.

   The selection of hospital-based providers will be based on the following criteria:

   a. established identifiable alcoholism treatment program,

   b. service offering canparable to demonstration providers,

   C. client population comparable to demonstration providers, and

   d. willingness to provide cost and client data

   The pool of hospital-based programs. under consideration for inclusion in the study has been identified. Final selection will be made during the early stages of implementing the evaluation plan, based on additional information on the providers, and negotiations with them concerning participation in the HASD evaluation effort.

Type of Design. The evaluation is based upon use of three variant quasi-experimental designs with nonequivalent comparison groups:

1. The strongest of the three designs, the pretest-posttest multiple time series design, is used to address the impact questions related to total health care costs and to the Medicare canponent of expansion/substitution effects. This design requires comparable data in the baseline and waiver periods.

2. An alternative design, used to address the client outcome priority as well as the expansion/substitution issue for Medicaid clients, is the post-test only multiple time series design. This "waiver only" design is used when temporal patterns are important but baseline information is lacking.

3. The final design employed is the post-test only cross-sectional design. This design, which is critically dependent upon adequately controlling for case mix and service mix differences across treatment settings, is the basis for the analysis of utilization, cost, and client outcome differences between demonstration and hospital-based providers.

The provider structure and provider operations questions are addressed by case studies and are not subjected to rigorous quantitative analysis. Therefore, no formal research designs are needed. The descriptive analyses in these case studies, however, will most closely correspond temporally to the waiver-only time series design (and are, therefore marked as such on Exhibit 2).

The above three designs are the most rigorous available framework for the evaluation considering the inherent aspects of the demonstration itself which precluded a true experimental approach. For example, umbrella grantees and their respective treatment providers were self-selecting. Grantees chose to respond to the Federal Register grant announcement, and their providers were solicited to participate in the demonstration. No randomization of grantees nor their participating providers was possible. Similarly, randomization of Medicare and Medicaid clients to participating and nonparticipating providers is also not possible. These features of the HASD project prompted the structuring of an evaluation design which attempts to minimize the threats to external validity presented by the lack of randomization, and offers controls against alternative explanations for study findings to enhance internal validity.

Units of Anlysis. The units of study vary across the different research issues, partly as a function of the focus of the questions (e.g., client outcomes focusses on clients, and provider structure on providers), and partly as a function of data availability (e.g., expansion/substitution focusses on providers because client-specific data cannot be developed). Specifically, in the case of alcoholism service utilization and cost, total health care use and costs, and client outcome, the primary comparative data will be based on clients from demonstration and hospital-based providers. For the provider structure and operations issues, demonstration, comparison, and hospital-based provider data will be used. Finally, for expansion/substitution analyses, provider-based data on client flows will be employed.

Types and Sources of Data. Primary data collection, including site visits, grantee interviews, grantee record reviews, and provider and referral source interviews, will be the basis for the case study and descriptive aspects of the HASD evaluation (including assessments of provider structure and operations). A canbination of primary and secondary data will be employed for addressing impact-related research questions. Client intake, treatment, and follow-up records available at participating provider sites are important primary data sources for the utilization and cost comparison between demonstration and hospital-based providers, and for the client outcome component of the study. The latter also makes heavy use of follow-up client survey data. The total health care utilization and cost issue is addressed principally through the use of secondary administrative records (claims) available from states and HCFA data files. Finally, expansion/substitution effects are address through acquisition of aggregate provider level information on client flows, to be culled from providers' management records.

Other data are employed in many of these analyses but are not the principal data involved in a particular area. For example, claims data (available through the total health care cost analyses) are used to create a "proxy" measure of health status in the utilization and cost analyses.

Conversely, client records (abstracted as part of the use, cost, and outcome analyses) are employed to obtain linking client identifiers needed to obtain claims records in the first place.

In general, because of the complexities of the demonstration, and the many and varied aspects to be evaluated, a combination of approaches is required. Extensive use of secondary data will be made to address many of the research priorities at a general level across all six grantee states. These sources include Federal and state automated data systems as well as local provider records systems. In addition to using extant data sources, primary data gathering will be used in two grantee states to collect detailed service utilization, costs, and client behavioral outcome data which are not available in secondary data systems. This two state substudy will permit very detailed analyses of the HASD effects on demonstration versus traditional hospital-based providers and clients. Client records abstraction and a client survey will be the primary data collection methods featured in the substudy. Also, as noted earlier, use of primary and secondary data for most of the evaluation's quantitative analyses will be supplemented with annual site visits to state grantees and a sample of demonstration, comparison, and hospital-based providers.

To be more specific about secondary data, it should be noted that such sources will include ODR's billing and cost accounting system which includes all the HASD participating providers to which Medicare reimbursements will be made. HCFA's 100% claims files will be used and, if necessary as a contingency, the MARS, MEDPAR and HISKEW files will also be used. Medicare cost reports for hospital-based providers will be available through BPO. These HCFA data systems will provide virtually all the Medicare-related data needed for the evaluation. Canparable Medicaid data will be secured through the State Medicaid Agencies' MMIS systems. The State Alcoholism Authorities' data systems are additional sources of secondary data for the evaluation.

III. DEMONSTRATION DESIGN ISSUES

To be sure, no evaluation plan developed for the HASD project could be completely free of design limitations. The most significant limitations in this evaluation result from 1) inherent features in the demonstration grant program itself, 2) exogenous changes over time which will influence the demonstration, 3) data and resource limitations; and 4) definitional problems.

HASD Design Features

&imitations

The demonstration design itself places two significant limitations on the evaluation effort; namely, non-random provider selection and client self-selection bias.

Non-Random Provider Selection. Participating demonstration and comparison providers were purposively selected in a non-random fashion by umbrella grantees who themselves were not randomly selected. As a result, generalizations from study results will be limited to the experiences of this provider population. More importantly, uncontrolled differences within the overall provider population but beyond the existence of the waivers alone may account for variations in study outcomes among treatment settings.

Client Self-Selection Bias. Not only may there be differences due to non-random provider inclusion, but because clients are free to choose their own providers, there may be differences due to their non-random self-selection. Such intersite differences may confound the impact of the waiver alone on measures of utilization, costs, and outcomes among the treatment settings.

Solution

These demonstration design features are accepted as givens and cannot be changed. The HASD project is not a field experiment and was not designed as such. It is a demonstration with reasonable controls on provider participation and service coverage parameters of interest to HCFA and NIAAA. Consequently, true experimental design criteria are not appropriate for guidance in building an evaluation strategy.

The quasi-experimental designs in this evaluation plan were selected to control as much as possible for the consequences of non-randomization. The nonequivalent control group design used to compare demonstration providers with canparison freestanding and hospital-based providers on both a pre/post basis and over time during the waiver period offers very strong control s over design threats to internal validity. Indeed, the multiple time-series feature of this design for some research priority areas (e.g., total health care costs) adds even more confidence in the internal integrity of study findings. The issue of generalitability, however, remains a design limitation. Consequently, we will need to always be mindful of the potentially unique characteristics of grantees, providers, and clients participating in the demonstration, and be reasonably temperate in interpreting study findings beyond this population.

Exogenous Changes Over Time

Limitations

Changes external to the demonstration itself may have differential impacts on the treatment settings under study. Examples of such historical factors are Section 223 Limits, DRG reimbursement models, and state reimbursement policy changes.

Section 223 Limits. Medicare hospital reimbursement has been changed to extend limits on reimbursed cost growth from only routine services to both routine and ancillary services. No such cost controls have been implemented on non-hospital providers.

DRG Reimbursement. It appears likely that per case hospital reimbursement will soon be the rule under Medicare based on pilot experiences with diagnosis related group reimbursement models. No such scheme is yet proposed for non-hospital providers.

State Reimbursement Policy Changes, *Sane* of the demonstration states, as a result of financial exigencies, are likely to change their Medicaid reimbursement policies for hospital-based treatment of alcoholism during the course of the demonstration. Michigan, for example, has recently sharply restricted reimbursement for inpatient rehabilitation in hospitals. In two of the demonstration states with Medicaid participation, the State Alcoholism Authority is actually funding 100 percent of the state share of Medicaid reimbursement costs under the demonstration. If utilization by Medicaid clients among demonstration providers in these states increases to the point of straining the resources of the SAA, benefit limits may be changed as a consequence during the course of the demonstration.

Solution

Field demonstrations such as the HASD project are always subject to the influences of on-going events beyond their control. Virtually every research priority area under consideration in this evaluation is vulnerable to such historical developments. However, the multiple time-series design coupled with the two comparison groups and annual site visits planned for the evaluation enhance our ability to identify developments which may be of significance to the demonstration, and incorporate them in interpreting study findings.

Canparison freestanding providers are important controls for assessing whether and how state and/or national events in the alcoholism treatment connnunity are confounding the effects of the HASD project among the demonstration providers. These canparison providers will help verify, for example, that if staff credentials among demonstration providers were raised during the demonstration period while canparable staff credentials at comparison providers remained unchanged, then the demonstration could be seen as contributing to an improvement in the credentialed status of freestanding provider personnel. On the other hand, if the alcoholism treatment community as a whole initiated a major move toward increased credentialing of treatment personnel, the increase we saw among demonstration providers should not be

attributed solely to the demonstration. The canparison providers constitute a design mechanism to more clearly separate on-going historical influences from demonstration influences.

The annual site visits to grantees and providers, and periodic joint conferences of grantees, HCFA, NIAAA, and the evaluation contractor personnel also provide ample opportunity to identify and discuss current developments which may influence the demonstration. Wherever possible, these external influences will be analytically controlled by adjusting study findings, For example, distributional analyses will be a canponent of examining some of the utilization data between demonstration and hospital-based providers. This will be necessary to accommodate the different Medicare benefit limits which exist in the two settings. In other instances, the influences of some new events will not be amenable to statistical adjustment, but will require their clear acknowledgement in interpreting and presenting the findings. The evaluation design for each research priority area is sensitive to historical events.

Data and Resource Limitations

Limitations

Because of the absence of coverage for alcoholism services in freestanding providers in the baseline period and because certain data are not routinely collected or retained (e.g., costs specific to alcoholism treatment units and clients in hospital-based provider settings), there are information gaps for some provider settings during the baseline period. There are also some data gaps on important client variables across all settings.

Intimately associated with the limitations of available data are the limitations of available resources for the project. Although recent Congressional interest in the HASD project has contributed to a substantial resource investment in the evaluation, the complexities of the demonstration itself can easily consume these resources if parameters are not placed around the essential research priorities to be addressed.

Solution

The joint problems of data limitations and resource constraints are approached in the evaluation by a two-tiered data collection strategy. The first tier makes maximum use of existing data systems to address the research priorities of the evaluation across all six grantee states. These data systems include SAA files, Medicaid MMIS files, and HCFA Medicare files. They provide sufficient detail on which a set of genera7 but limited conclusions can be based. The second tier goes beyond these secondary data sources to collect detailed primary data on clients and providers in two selected states. This two state substudy will permit significantly more and better analyses of demonstration effects on utilization, costs, and clients. Moreover, it will accord the only direct comparisons between demonstration and hospital-based providers.

The two-tiered data collection strategy represents an efficient and effective way of simultaneously 1) maintaining a six grantee state evaluation plan; 2) securing very detailed utilization, cost, and outcome data needed for analysis; and 3) conducting the evaluation within the resources allocated for the project.

Definitional Issues

Limitations

Operationaliting some important measures in the evaluation is complicated by variations in how data elements are captured in the record systems to be tapped, and differences in professional opinion on the appropriateness of alternative definitions. For example, there is little agreement in the alcoholism field on how to most appropriately define an "episode" of alcoholism treatment. This is important because such a unit would be ideal for measuring utilization and cost of alcoholism care. However, the demonstration benefits structure reimburses on the basis of service units which do not typically represent complete treatment episodes by themselves. That is, a reimbursed service unit of an outpatient visit, for example, is not likely to be all the treatment scheduled in an individualized treatment plan. Consequently, a minimum approximation to capturing cost or utilization by treatment episode would require accessing treatment plans for all clients in the evaluation database -- hardly an inexpensive proposition.

Another example of definitional problems in the evaluation concerns the aperationalizing of client behavioral outcome measures. The differences in measurement techniques, conceptual and philosophical underpinnings, and time requirements associated with client outcome measures are considerable. Preceding the definitional problem is the equally difficult task of selecting those outcome measures most appropriate to the HASD client population.

Solution

The evaluation plan makes use of existing definitions of data elements, to the extent possible. Where necessary, conversions will be made on data elements obtained from secondary sources to make them conceptually and practically uniform. A simple example of this is conversion of birth date data to age in years as the ultimate age data element. At a more sophisticated level, alternative definitions will be used which cut across variations in existing data systems. Using the episode of treatment as an example, the evaluation will use a time-based unit rather than attempt to establish a clinical definition for treatment episode. In this way, costs per period of time after initiation of treatment (e.g., per person month) was adopted. For treatment regimens with vastly different timeframes and/or unit costs, this approach is useful but suboptimal.

Relative to behavioral outcome measures, the evaluation will use those criteria and techniques which are mostreliable for the elderly, disabled, and low-income populations under study. To be sure, the client outcome component of the evaluation will not be as canprehensive in scale as might be the case were the demonstration grants initially designed as alcoholism treatment interventions; however, it will be sufficiently broad in scope to contribute meaningful and reliable information on the efficacy of treatment between demonstration and hospital-based providers.

Summary

This HASD evaluation research design report presents a plan for conducting a canplex assessment of extending Medicare and Medicaid reimbursement for the

treatment of alcoholism to freestanding providers of care. The design is unique in its approach to specific research priorities, and yet uniform in both its multiple use of data and analytical integration of study findings on utilization, costs, and outcome. The components are interdependent by design and, in so being, derive considerable cost efficiency over being done independently.

Recalling the major aspects of this project may *serve* to highlight the context for the evaluation:

1. The nation's two largest national health care support programs are involved (Medicare and Medicaid).

2. Reimbursement for alcohol treatment in freestanding facilities is being sponsored by these programs and jointly evaluated by HCFA and NIAAA.

3. Six states with differing experiences and Medicaid policies on alcohol services reimbursement are participating.

4. Four treatment service types are being reimbursed: inpatient and outpatient detoxification, and inpatient and outpatient rehabilitation.

5. Three nonrandom samples of treatment providers are being compared: demonstration, canparison, and hospital-based.

6. Two time periods are being studied: a two-year baseline period preceding waiver implementation, and a three-year demonstration period

These elements combine to pose a significant challenge to the evaluation effort. To be sure, the evaluation design reported here formally considers only a portion of the-wide differences which exist within the HASD. Available time, resources, and policy interests of the sponsoring agencies have all served to temper the extent to which the evaluation effort can embrace the multitude of issues currently surrounding the demonstration, as well *as* those which are likely to surface during its implementation.

Nonetheless, the HASD evaluation design is a multi-faceted plan which addresses a broad range of research priorities within the complex dimensions of the demonstration itself. The design employs data collection and analysis strategies which enhance the utility of limited secondary data systems, provides general and in-depth answers to the questions at hand, and considers the pressing policy concerns of HCFA and NIAAA relative to alcoholism treatment reimbursement and quality of care. It is our belief that the essential concerns which have given rise to the demonstration are reasonably and practically integrated into the overall plan for evaluation described here. It is a reasonable and practical plan which should be implemented as soon as possible given the on-going nature of the demonstration itself.

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APPENDIX A

OVERVIEW OF RESEARCH PRIORITY AREAS

This appendix focusses on the various research priority areas identified above and provides a discussion of our rationale, placing each priority of the HASD evaluation in both its research and policy context. This is followed by the delineation of the research hypotheses we intend to test as well as the research design, units of analysis, data requirements, measurements approaches, and analytical strategies associated with each area.

Research Priority #1: 'Utilization', Cost, and Outcome

Rationale

Previous research provides very limited information on utilization, cost, and outcome differences between freestanding and hospital service providers because most studies have focussed on the relative efficacy of alternative treatment modalities and not on the settings in which treatment is dispensed. Moreover, none of the earlier studies has focused on the Medicare or Medicaid populations.

Although Research Priority #1 addresses issues of utilization, cost, and client outcome, the methodologies for studying the utilization and cost issues as compared to the outcome issue are different in many respects. For example, extensive records abstraction and data extraction from secondary data sources are planned for the utilization and cost data; whereas, a client survey is envisioned as a principal data source for the.outcome component. Presentation and discussion of the methodological approaches to these issues is clearer if utilization and cost aspects are treated together, and client outcome is treated alone,

The remainder of this section, therefore, addresses only the utilization and cost comparison aspects of Research Priority #1. Outcome issues are addressed in two places -- in the section on total health care utilization and costs (a measure of outcome) and in the section on quality of care (in both outcome and process aspects).

Hypotheses/Research Questions

The purpose of this analysis is to identify differences in the utilization patterns of those receiving treatment for alcoholism in hospital-based versus freestanding demonstration sites, and to examine the impact on the cost of treatment. The obvious difference between hospital-based and demonstration providers is the relative emphasis on inpatient versus ambulatory care. Moreover, the analysis requires consideration of both the total cost of services across settings and the unit service costs across those settings. In considering these factors, a total of five utilization and, seven cost hypotheses were specified (see Exhibit 1).

Basic Design Approach

The comparative analyses of util itation and cost between demonstration providers and traditional hospital-based providers will focus on a two state substudy during the waiver demonstration period. Baseline data on alcohol services use and costs will be extremely limited, even though primary sources are used, because available records will be provider-based rather than client-based. That is, care received from providers outside those included in the HASD evaluation may be noted in client intake records at study providers, but quantitative utilization and cost information will be lacking. However, baseline information on alcoholism history, alcoholism service use history and health status as well as client age and sex (available from intake records) will be used to statistically adjust the demonstration period data to account for case mix differences.

Primary data collection will be employed in this substudy due to the very limited ability of secondary sources to provide uniform detail on services and cost. This is particularly problematic for secondary data on hospital-based providers which do not permit clear identification of clients receiving alcohol services, alcohol-related as distinct from other medical services provided to such clients, prior history of alcohol abuse and alcoholism, prior alcoholism treatment history and client health status at intake.

Canpilation of the extensive dataset required for this substudy, in all the demonstration states, especially considering the need for primary data collection in many areas, would be prohibitively expensive. As a result, we have chosen to focus this substudy (as well as other substudies noted earlier) on two of the demonstration states. After consideration of many diverse state characteristics, we have identified three primary candidate states for this substudy: Michigan, New Jersey, and New York.

Units of Analysis

Hospitals. Since the primary policy questions of interest concern cost-effectiveness of treatment of alcoholics and alcohol abusers in freestanding versus hospital-based program regimens, we plan to limit the selection of hospital-based providers to those with distinct alcoholism treatment units. In the two most likely candidate substudy states the numbers of such hospital-based providers is relatively small. New Jersey has only 10 such providers, while Michigan has 16 of them. Since their numbers are small, all of them will be included as study providers in the HASD evaluation.

Clients. As discussed above, we have interpreted the present research question as an assessment of whether demonstration providers succeed in lowering the costs of alcohol treatment either by lowering unit costs overall or by substituting utilization of less costly services in place of more costly ones. Given this interpretation, the present research question is necessarily concerned with utilization and cost only among those actually receiving treatment.

Services. Because the two settings are likely to differ in their service mixes, direct canparisons must be made separately by types of services (detoxification and rehabilitation). Moreover, since neither theory nor

avail able data will support the unambiguous definition of episodes of treatment, all analyses will focus on services provided per unit of time after treatment initiation.

Sampling. The population to be studied is operationally defined as alcohol service recipients in hospital-based and demonstration providers who are reimbursed by Medicaid and/or Medicare during a one year period after implementation of the demonstration waivers'. Since we intend to sample from all traditional and demonstration providers in our sampling frame (rather than using a two-stage sampling plan where providers are sampled first and then clients) the optimum sampling strategy is to use simple random sampling of clients within strata defined by the variables of interest. The primary analytical purpose of this study is to permit stable comparisons of differences between various subgroups (defined by state, client type -- i.e., Medicare or Medicaid, and provider type -- i.e., demonstration or hospital-based). Therefore, the sampling plan is designed to maximize the precision of estimates in each subgroup (rather than to maximize the overall population precision of estimate).

There are eight major strata within which we wish to achieve equal precision: 2 states x 2 client coverage groups (Medicare and Medicaid) x 2 types of providers (freestanding demonstration x hospital-based). Taking account of estimated client loads in the two most 1 ikely states and applying appropriate statistical formulas, yields the following sampling plan:

	State 1		State 2	
	Medicaid	Medicare	Medicaid	Medicare
Hospital-based	N=1,655	3,345	2,828	4,672
	n= 315	357	350	368
Freestanding Demonstration	N= 500	500	500	500
	n = 222	222	222	222

N = Estimated Client Load

n = Strata Sample Size

Total Sample Size = 2,278

Data Required/Data Sources

In order to conduct the utilization and cost comparison of demonstration and traditional providers, several types of data are needed:

- Characteristics of Providers are needed in order to classify providers tor purposes of assuring necessary variation of clients on important analytical variables through appropriate stratification in the sampling plan.
- Characteristics of Clients are needed in order to control for differences in case mix across settings and to permit proper classification of clients on important analytical variables (e.g., Medicare/Medicaid program coverage).
- Utilization Information is needed in order to adjust for service mix differences across settings and to provide measures of important dependent variables.
- Charge Information is needed for other than demonstration providers because, in the absence of client-specific cost data, it must be used in conjunction with general cost-allocation information, to estimate the costs of providing services to study clients.
- Cost Information is needed to provide direct or indirect measures of the most important dependent variables of the study.

The data identified above will be gathered by contractor staff from a variety of sources, including:

- Grantee SAA Files
- American Hospital Association Hospital Survey Files
- National Drug and Alcohol Treatment Utilization Survey (NDATUS)
- Provider Billing Records
- Client Intake Records
- Client Treatment Records
- ODR Bill Files
- ODR Cost Reports
- HCFA/BPO Hospital Cost Reports
- Medicare Enrollment Files
- Medicaid Enrollment Files
- Medicare Claims Files
- Medicaid Claims Files
- Client Survey

Analytical Strategies

One of the most powerful methods of controlling for pre-existing conditions in studies of nonequivalent canparison groups is to statistically adjust the analysis by including direct estimates of pre-existing differences in the analytical model. We intend using one of the most widespread adjustment techniques for comparing nonequivalent groups, Analysis of Covariance (ANCOVA). Basically, this method statistically partitions the

criterion variation into a portion that is uniquely accounted for by pre-existing group differences and a portion that remains (the residual). This residual variation is then tested for program effects. In this way, pre-treatment variaton on the criterion variables is partialled out of the post-treatment comparison of means.

Research Priority #2: Total Health Care Costs

Rationale

The primary intent of this research priority is to evaluate whether the expansion of alcoholism treatment benefits to freestanding settings is cost-effective in terms of its net effects on Medicare and Medicaid refmbursements for health care. The function of the analyses, therefore, is to assess whether total Medicare/Medicaid reimbursed health care costs are significantly lower for those who have received treatment from a freestanding provider than for those who remain untreated.

The extent of the savings achieved by alcoholism treatment will depend not only on whether rehabilitation from alcoholism leads to significant improvement in health status, but on the extent to which treatment is efficacious in rehabilitating the patient from alcoholism in the first place. A comparison of the relative effectiveness of treatment by freestanding versus hospital-based providers on total Medicare/Medicaid covered health care costs is, therefore, an additional objective of the analysis.

Hypotheses/Research Questions

Two hypotheses were formulated for this portion of the HASD evaluation. One dealt with demonstration versus hospital-based comparisons, while the other dealt with comparisons between treated and untreated populations. Exhibit 1 includes each of these hypotheses (H2a and H2b).

Basic Design Approach

Unlike the measurement of alcoholism related treatment utilization and costs (which requires an inherently cross-sectional design), the ideal design for the assessment of total health care costs is a quasi-experimental pretest/posttest design with nonequivalent groups. This design, while not controlling for prior differences between groups, does control for a number of other confounds, such as historical and maturational trends over time. Pre-existing differences are controlled by introducing as covariates other characteristics which might explain differences in utilization and costs between the two groups. This design may be applied readily to the comparison of total health care costs for those treated in freestanding versus hospital-based settings, since pretreatment and posttreatment measures of cost will be available in the two state substudy for clients of both freestanding demonstration and hospital-based providers.

The same design is also the optimum one for evaluating the total health care costs for untreated alcoholics versus those treated in freestanding sites.

Given available data sources, however, the only alcohol abusers who can be identified in the present study are those who actually receive treatment for alcoholism, whether from a demonstration or a hospital-based provider. So, the only comparison group available is one consisting of a sample of all Medicare and/or Medicaid beneficiaries, selected without regard to whether they are alcohol abusers. An examination of the total costs of reimbursed health care for these people over the demonstration period can be used to statistically adjust the health care costs of treated alcohol abusers so that the residual effects represent the 'true" health care costs of treated versus untreated alcohol abusers.

Units of Analysis

Three sets of individuals must be identified for this analysis: 1) those receiving alcoholism treatment services from freestanding demonstration providers, 2) those receiving alcoholism treatment services from hospital-based providers, and 3) the genera7 comparison sample of Medicare/Medicaid beneficiaries. Persons receiving treatment for alcoholism in freestanding demonstration and hospital-based settings will be identified in the two state substudy, The selection of a general comparison sample is more problematic. This sample cannot be identified by contacting hospital-based and other providers in the service area, since this would fail to identify those who had not utilized any services. Total health care costs must, therefore, be calculated over the entire beneficiary population. This requires access to centrally-maintained Medicare/Medicaid enrollment and claims history data. In addition, since trends in observed health care costs in any single area may be widely divergent from the national norm, the analysis will use state specific comparison groups rather than a single national sample group.

Data Requirements/Data Sources

In order to compare total health care costs for those treated in demonstration versus hospital-based sites, the same data requirements identified in the previous section for the evaluation of the utilization and costs of alcohol treatment services across the two settings apply. That is, we must be able to 1) identify all Medicare and Medicaid-covered individuals receiving alcoholism treatment services in both hospital-based and freestanding demonstration settings; 2) calculate utilization and costs for the baseline and waiver periods, in this case for a77 covered services not just alcohol treatment services; and 3) control for pre-existing differences between the clients in each setting. Because of this, the same two state data collection approach proposed to address the previous research questions is equally applicable here.

Given that the health care costs incurred by Medicare/Medicaid beneficiaries may span any number of providers, the most accurate record of total health care costs will come from the claims submitted by providers and maintained by states (for Medicaid) and HCFA (for Medicare). For the Medicare sample, the most appropriate HCFA maintained file is the MARS 100% bill file. For the Medicaid sample, the SURS files will be obtained from the two states selected for the study. Some of the variables for making covariate adjustments for pre-existing differences will be available from the

secondary data (e.g., age, sex, prior utilization). More precise measures of health status, prior alcoholism history, and prior treatment will be obtained by abstracting from client medical records.

In canparing the health care costs for treated versus "untreated" alcoholics, since only demonstration and not hospital-based providers are included in the analysis, the identification of persons receiving treatment in all six states is assured because of the already established cooperation of demonstration providers. This portion of the analysis therefore, will be performed in all six states.

Analytical Strategies

The designs used to assess both research questions are pretest/posttest designs with nonequivalent comparison groups. For the one research hypothesis, the two comparison groups are 1) the clients of freestanding demonstration providers and 2) a general population canparison sample. For the other research hypothesis, the two comparison groups are 1) the same clients of freestanding providers, and 2) clients of traditional hospital-based providers. Since both pretest and posttest measures of total health care costs may be calculated for any convenient intervals, this allows for the use of a repeated measures design. This statistical procedure tests for significant differences between the two groups in the slope of their health care costs over time, thereby controlling for unrelated concommitant events that are assumed to affect each group equally.

Given that pre-existing differences in the composition of the two groups may account for subsequent differences in levels and trends of utilization, analysis of the data calls for the application of statistical controls. On the basis of the arguments presented previously, covariance adjustments using selected client characteristics will again be used to control for pre-existing differences.

Research Priority #3: Quality of Care

In addition to the issues of service utilization and cost, the HASD evaluation concerns itself with the quality of care provided Medicare beneficiaries and Medicaid recipients. Indeed, quality of care, is the third essential ingredient in interpreting the study results on service utilization and cost.

It will be important, for example, to explicitly document the extent to which quality of care standards among demonstration providers are appropriate for the care they provide, and acceptable to the treatment and third-party payor comm unities. Failure to do so would make suspect any conclusions favoring freestanding over hospital-based settings solely on the basis of lesser unit cost. Lesser cost treatment of questionable quality may result in even greater total future program costs than might result from continued hospital-based treatment. On the other hand, lesser cost treatment of acceptable quality may have a dampening effect on future utilization and cost of health care, as discussed previously.

In this evaluation, quality of care is examined in two complementary canponents. The first canponent entails a study of a client-based behavioral outcomes associated with treatment. The second component consists of examining structural aspects of treatment providers themselves. That is, considering provider features such as 1) staff characteristics, 2) supervision relations among provider staff, and 3) quality assurance systems. This latter component focusses on the structural context of treatment which may influence the quality of care provided.

The discussion which follows presents the plan for conducting the client outcome canponent of the evaluation. This plan is part of the two state substudy where detailed analyses will also be conducted on utilization and cost cunparisons between demonstration and hospital-based providers. More general outcome related data in grantee states' SAA data systems will also be used to measure treatment completion and recidivism among demonstration providers.

Client Outcome Cunponent

Basic Design Approach

With reference'to the overall multiple time-series quasi-experimental design for the HASD evaluation, the features of most relevance in the outcome assessment are waiver period, between-group comparisons which juxtapose results for demonstration clients and traditional hospital-based patients. Therefore, similar to many of the alcohol-specific utilization and cost cunparisons discussed previously, client outcome data will only be collected during the approximately three years the reimbursement waivers are in place. Attempting to secure retrospective outcome data on clients prior to the waiver data is neither feasible nor necessary to address the essential question of treatment efficacy between demonstration and hospital-based providers.

The exception here concerns the Research Priority #2 tracking of total health care utilization and costs for the demonstration and hospital-based cohorts. Although the total health care utilization and cost issue is presented separately in this report, it constitutes a true measure of treatment efficacy at a macro-analytic level. While most of the behavioral outcome variables will be compared between demonstration and hospital-based clients in the waiver period only, total health care utilization and cost measures (as previously discussed) will be assessed on a pre-post treatment basis.

Units of Analysis

The client is the unit of analysis in addressing the client outcome area. Specifically, clients of demonstration and hospital-based providers in the two state substudy will be the focus of this analysis. These clients will be drawn in the same manner as described in the sampling plan under Research Priority #2. Indeed, with optimal cooperation of clients in agreeing to participate in the outcome study, the clients will be identical in the analyses of utilization, costs, and outcome.

Data Required

Data will be needed on an array of client variables at intake, discharge, and 12 months after admission. In selecting outcome criteria for potential use in the HASD project, consideration was given to both their appropriateness and practicality. Previous evaluation studies offered virtually no guidance in selecting criteria which are particularly suited for the poor (Medicaid) and elderly or disabled (Medicare) populations which will be examined in this project, In reviewing alcoholism treatment evaluation efforts undertaken in the last three decades, one is struck not only by the broad range of life areas that have been examined, but also by the considerable number of variables used to measure outcome within each area. Separate reviews by Emrick (1974) and Maisto and McCollam (1980) found evaluation studies which measured outcome in the following life areas: drinking behavior, substance use other than alcohol, vocational functioning, social functioning, 1 egal involvement, physical health, use of treatment resources, emotional functioning, intellectual functioning, and residential status. Relative to the populations studied, only one study (Chesrow, Kaplitz, Levine, Musci, and Sabatini, 1962) had evaluated a predominantly elderly population (a mean age of 64 for 40 subjects), and only a handful of studies (Myerson, Mackay, Wallens, and Neiberg, 1961; Nash, 1962; Pattison, 1965; Myerson and Mayer, 1966; Quinn and Henbest, 1967; Kissin, Rosenblatt, and Machover, 1968; and Zimberg, Lipscomb, and Davis, 1971) clearly assessed a predominantly poor, unemployed and disadvantaged population.

While a seemingly unlimited array of outcome measures could be considered appropriate, practical considerations render it necessary to select a limited number of specific criteria. These are:

- Client Demographics
- Treatment Completion
- Recidivism
- Drinking Behavior
- Arrest History
- vocational Functioning
- Social Functioning
- Mortality.

These eight areas were selected because of their sensitivity to the behavioral outcome dimensions most relevant our HASD client population. Client demographics are analytic control variables, but have also been found to be significant predictors of outcome. Treatment completion and recidivism measures serve a very practical purpose of qualifying the intensity of treatment received. Drinking behavior, arrest history, vocational functioning, social functioning, and mortality represent serious life areas among the elderly, disabled, and low income in which the negative consequences of alcoholism and alcohol abuse are prominent. Other life areas are also deeply affected by alcoholism (e.g., emotional functioning), but are not included in this study because they are too difficult to measure reliably.

Current Outcome Definitions

The following definitions will guide the review of outcome related data maintained in client *records.*

1. Treatment completion--defined as being judged a treatment completor by the primary care giver. This criterion can be measured by entries in patient files noting by written statement or code number that treatment was canpleted. Of course, this criterion will be inappropriate for evaluating treatment agencies where treatment is seen as a continuous process with no end point until the patient leaves treatment by self-selection, moving, or death.

2. Recidivism--defined as the number of subsequent entries into treatment for substance abuse in a setting that is at least as restrictive as the setting in which the patient became involved in the project. Patient self-report and treatment agency records will be used to measure this criterion.

3. Posttreatment drinking behavior--defined as the number of days the patient is totally abstinent, drinking moderately (less than 3 oz. ethanol), drinking heavily (more than 3 oz. ethanol), not drinking because of hospitalization, not drinking because of incarceration, not drinking because of residential treatment, and not drinking because of prescribed medication which prohibits drinking (particularly for elderly patients). This criterion should be assessed by interviewing patients using the time-line follow-back method inasmuch as this method has been demonstrated to yield the most complete data (Sobell, Cellucci, Nirenberg, and Sobell, 1982) and has demonstrated reliability and validity (Sobell, Maisto, Sobell, Cooper, Cooper and Sanders, 1980). Collateral informant data and in-field breath tests on a probe day basis could also be used to measure this criterion as an alternative.

4. Arrests--defined as the number of arrests of any kind for alcohol-related and nonalcohol-related reasons. Patient self-report data and examination of public records will be used to assess this criterion..

5. Vocational functioning--defined as the usual employment pattern, number of days worked, sources of income, patient's perception of employment problems and patient's perception of the need for employment counseling during the period of observation.

6. Social functioning--defined as the patient's satisfaction with his/her interpersonal and recreational life. This criterion could be measured using the interview schedule developed by McLellan et al. (1980).

7. Mortality--defined as physical death and measured by the time from treatment admission to the day of death. Whenever possible, death certificates will be reviewed to document the date of death and to receive information on the cause of death. Whenever possible, the death will be classified as. directly related to alcohol abuse (e.g., death due to lethal interaction of alcohol and prescribed medication--a particularly likely occurrence with infirm, elderly patients), indirectly related (e.g., death by pancreatitis) or unrelated (e.g., death by automobile accident when patient had a zero blood alcohol level), or death by influenza.

Additional data relevant to directly assessing and/or statistically controlling factors which influence client outcome will need to be sought on demographic characteristics (age, race/ethnicity, gender, etc.); pretreatment pattern and amount of drinking; and general health status. Collection of data regarding a client's life stressors encountered during the period of evaluation would also be appropriate because some research has shown that an alcoholic client's outcome adjustment is influenced directly and indirectly to a significant degree by life stressors encountered during and after treatment (Moos, Cronkite and Finney, 1982).

Data Collection Strategies

Acknowledging the substantial resource implications of conducting an approximate ideal treatment efficacy study and the inherent design features of the demonstration which was not intended to be a treatment intervention, the modest client outcome component of the substudy was structured to make maximum use of existing records systems. Data elements available in the State Alcoholism Authority's (SAA) information systems were first examined for compatibility with, or approximation to, the selected outcome measures. Both available discharge and follow-up data were examined.

Only two states participating in the demonstration have existing follow-up data on their SAA systems. These are: 1) Oklahoma, which collects follow-up data at three, six, 12, 18, 24, 30 and 36 months; and 2) Michigan, which collects follow-up data from a sample' of clients at six months. New York has no client-specific information available, and Illinois collects only a few data elements on their clients. New Jersey and Connecticut have discharge data available on clients of reporting units.

Each of the outcome measures discussed above is again presented here along with an overview of the availability of information from respective state SAA systems.

1. Treatment completion. Each of the five states collecting client data (all except New York) has a data element on discharge forms that indicates whether the client completed treatment. The names of the data elements vary somewhat and include a variety of categories, but each can be adapted or recoded to indicate treatment completion.

2. Recidivism and additional treatment use. Oklahoma's system can provide some data for this element. Oklahoma records admissions to hospitals, residential! detox, or outpatient care in the six months preceeding the completion of the form. The number of treatment days in the last month is also recorded.

3. Posttreatment drinking and other substance abuse, Two state SAA systems can provide some measure of drinking status at discharge. These include "current substance abused at time of discharge" (Michigan); and, "drinking status on termination" (New Jersey). Follow-up measures are "current use and longest period of nonuse" (Michigan), and "use of alcohol in the last six months" (Oklahoma). Four states (all but Illinois and New York) have some measure of drinking levels at discharge. Michigan and Oklahoma record frequency

of use in 30 days prior to discharge. New Jersey records this in terms of increase or decrease relative to the pretreatment level. Connecticut records "condition of discharge" in terms of improved or worse than prior to treatment. Michigan and Oklahoma record the frequency of consumption in the previous 30 days on follow-up forms.

4. Arrests. Oklahana and New Jersey collect data elements on legal status at the time of discharge. Michigan records arrests since admission and legal status on discharge. Oklahoma and Michigan record posttreatment arrests on follow-up forms, but only Michigan differentiates on the alcohol-related nature of the arrest.

5. Vocational Functioning. Four States collect employment status at discharge. Four of these have separate categories for full or part time employment. Michigan and Oklahoma collect status at follow-up., with Oklahana including the number of days worked in the last 30 days and whether or not the client has worked in the last six months.

6. Social functioning. Three states collect information relative to the social or vocational concerns of the clients. In Michigan, the elements record whether or not the client has problems with family, job, health, etc. In New Jersey (at discharge only), the general condition of the client relative to family, job, health, legal status, etc. is collected. Oklahoma records level of functioning as a general measure at discharge. Michigan collects these measures at outcome also.

As the reader can see from the above discussion, the available data from participating states are not sufficient to adequately address the issue of client outcome based on SAA systems alone. Five of the six states can offer sane data elements at discharge which address most of the desired outcome measures. The most camp1 ete are Michigan, New Jersey and Oklahoma. Connecticut can offer fewer elements. New York and Illinois do not have the data elements needed.

Two states do have follow-up data. The Michigan system is well developed, but captures only a sample of clients, and only at six months after discharge. The providers may fill out somewhat different forms, depending on the data consortium to which they belong. Oklahoma has considerably greater follow-up, but their demonstration will include only Native American programs, and will not include Medicaid clients. Therefore, the data from that system would be of little utility in addressing broader client outcome concerns.

Primary Data

Given the need for collecting original data to address the selected outcome measures, a number of methodological issues must be considered. These include instrument development, sample selection, and method and intervals of data collection.

Instrument Development. As discussed above, the available data in .the SAA systems cannot address the client outcome question adequately. Consequently, one or more survey instruments will need to be developed to capture the

information at intake, discharge, and 12 months following admission. To the extent our review of the client intake and discharge forms maintained at the provider level indicates these records are adequate, only a follow-up instrument will need to be developed. If the client records are partially adequate, consideration will be given to developing a supplemental data form(s) to augment the intake and/or discharge forms currently in use. In the event client records are too variable for our purposes, then completely new forms will need to be developed.

Regardless of the number of data collection instruments which may need to be developed for the client outcome component of the two state substudy, consideration will need to be given to the reliability and validity of the instruments used. From a pragmatic perspective, outcome related data found in client records will be checked for reliability, wherever possible. This will include checks against police records for self-reported arrests, collateral informants for aspects of vocational and social functioning, and death certificates for confirming and determining the cause of death.

Samplf ng Plan. The client outcome component is designed to provide behavioral outcome data on the same sample of clients for whom Research Priority #1 service utilization and cost data will be collected. Consequently, the sampling plan is identical to that described in the earlier section of this report. Depending upon the volume of clients experienced by HASD providers during the first six months under the waiver provisions, clientswill either be sampled from the population of clients at demonstration and hospital-based providers or a census of al 1 clients during a prescribed time period will be used as the study group.

In addition to having the advantage of combining service utilization, and cost data with outcome data for analytical purposes, using the same clients for the outcome analysis will allow separate analyses of services by provider type necessary for making cost comparisons between demonstration and hospital-based providers. Just as the cost analysis would be biased if the underlying services provided in both settings were not reasonably comparable, so would the outcome analysis. Moreover, we expect to find greater homogeneity within either demonstrati on and hospital-based providers than between them. It must be remembered, however, that we are dealing with a natural distribution of treatment settings and treatment regimens which are outside the control of the demonstration and the evaluation contractor. Every effort will be made to describe fully all relevant features of providers selected for study.

Method and' Interval of Data Collection'. Data collection will consist primarily ot client records abstraction at provider sites, and a personal client interview 12 months after entry to treatment. Records abstraction will be performed by trained personnel in the field and supervised by a state data coordinator. Follow-up client interviews will be conducted 12 months after entry to treatment. These interviews will be conducted by telephone, with provisions made for field interviews where clients cannot be contacted by telephone. Trained telephone interviewing staff will conduct these interviews from LJA's corporate offices. Experienced field interviewers will be dispatched from LJA to conduct all face-to-face interviews which may be required.

A one year follow-up is planned due to the short duration of the HASD project and suggestions of several studies that relapse from abstinence to drinking is most likely to occur in the first six months following treatment, and becomes stable after one year (Wilby and Jones, 1962; and Pattison et al, 1968). Other studies have used longer periods of up to four years (Pfiefer and Burger, 1952; Fitzgerald et al, 1971; and Polich et al, 1980), and even five years.

We will also need to install mechanisms for locating clients for the follow-up interviews. They will include securing names, addresses, and telephone numbers of a close friend or relative who is most likely to know the whereabouts of the client after treatment. Since we do not intend to maintain any contact with the client between the discharge date and the follow-up interview date (conceivably a full year), having a reliable and accessible method of locating the client for follow-up is essential. Fortunately, we will be able to use Medicare and Medicaid files to locate clients who remain on the rolls throughout the period. These files will be less useful for clients who drop off the rolls for reasons other than death.

Analysis, The framework for analyzing the client behavioral outcome data is very similar to the strategy employed in the Research Priority #2 analysis of total health care utilization and costs. We are concerned with changes on the outcome variables between admission to treatment and 12 months later. The null hypotheses will be tested using client data from demonstration and hospital-based providers in the two state substudy. The Analysis of Covariance model will be used to statistically control for covariates such as health status, age, and prior utilization.

Structural Assessment Component

The second strategy for examining quality of care involves studying structural aspects of treatment providers. That is, considering provider features such as 1) staff characteristics, 2) supervision relations among provider staff, and 3) quality assurance systems. This approach focusses on the structural context of treatment which may influence the quality of care provided. Unlike the behavioral outcome component of the study's quality of care assessment, the examination of providers' structural aspects is intended to be descriptive in nature rather than analytical. Its purpose is to simply compile information on primarily HASD providers which can be used to assess the extent to which a context exists that would be capable of supporting adequate quality of care.

1. Staff Characteristics

Measures and Sources of Data. Descriptions of staff from demonstration, comparison, and traditional hospital-based providers will be based on units of full time equivalents (FTE) for staff categories defined in the 1982 National Drug and Alcohol Treatment Utilization Survey (NDATUS). These categories provide a rather direct means of distinguishing among staff credential status, medical versus non-medical treatment staff, and administrative versus direct

care staff. The categories to be used are:

- Physicians,
- Registered nurses,
- Other medical: Licensed Practical and Vocational Nurses, Physicians Assistants, orderlies, lab technicians, pharmacists and other allied health professions,
- Psychologists, MA and above,
- Counselors, credentialled and/or counseling degree,
- Counselors, other: All staff members who function as counselors with (1) degrees of any kind which are unrelated to counseling, (2) education or training in counseling below the B.A. level (Associate of Arts degree or other types of training in counseling), or (3) no college education or degree.
- Other direct care staff: All direct care personnel who do not function as counselors and who do not have any of the credentials or training specified in the above categories. Includes the various therapeutic specialties, and
- Administrative or support staff: All personnel engaged in administrative duties except for those who have the training or credentials of the disciplines listed above. This category includes accountants, analysts, business managers, data coordinators, evaluators, research assistants, secretaries, etc.

Sources of data for the FTE measure by category for demonstration, canparison, and hospital-based providers were considered. Three possible sources were identified:

- NDATUS surveys,
- Providers themselves, and
- Provider reports to licensing/certification or other bodies which reqire staff information.

Descriptions of provider staff characteristics will consist of four parts for each of the provider groups. That is, demonstration, comparison freestanding, and traditional- hospital-based providers will be similarly described relative to:

1) existing and revised requirements concerning staff characteristics,
2) baseline profiles of staff FTE's by category,
3) waiver -period staff profiles, and
4) explanations fran providers on any changes in characteristics which appear over time.

The annual site visit discussions with grantee and provider personnel will provide insight to changes in staffing profiles which reflect direct and indirect impacts of the demonstration., as well as influences external to the HASD project itself.

2. Supervision Relationships

The primary interest in this area of the structural assessment is the role played by medical personnel in supervising treatment. While the demonstration providers do not typically have as many physicians and other medical personnel -as do traditional hospital-based providers, it will be necessary to examine how the medical and non-medical staff interact in the freestanding settings of the project.

3. Qua7 ity Assurance

The primary concern here is being able to confirm the existence of quality assurance systems among HASD providers, and monitor any changes which may occur over the term of the demonstration project. A number of factors need to be addressed regarding quality assurances of the demonstration providers. These include, but are not limited to, the following:

- plan for medical emergency
- affiliation agreements with hospitals and physicians
- physical facility safety
- compliance with SAA licensure or certification
- Alcoholism Counselor Certification.

Summary

The structural assessment of providers in the HASD project is intended to complement the client outcome canponent of the evaluation's quality of care concern. It considers aspects of staff characteristics, supervision relationships between physician and non-physician personnel, and quality assurance systems. The structural assessment is entirely descriptive in nature, and relies rather extensively on site visit discussions with grantee and provider staff for comparative information.

The client outcome canponent is analytically focussed and relies upon client records abstraction for intake and discharge data, and a client survey 12 months after admission for follow-up data. The initial plan for the client outcome substudy will be reassessed during the first months of implementing the overall evaluation plan in light of NIAAA's concern that it be as methodologically rigorous as possible.

Research Priority #4: Expansion/Substitution Effects

Rationale

An underlying assumption of the HCFA Alcoholism Services Demonstration is that, by extending Medicare and Medicaid reimbursement for alcoholism treatment to freestanding providers, total expenditures by the Medicare and Medicaid po g ams will be reduced. This should be accanplished by at least a Partial sh ift of the clients who would previously have gone to hospital-based providers for treatment to less costly freestanding sites. Given such a

than by examining the historical use patterns of those in a given setting at the time of the demonstration (although as will be discussed later, these data may be suggestive). Using this longitudinal design, an expansion effect will be inferred from an increase in the aggregate number of Medicare and Medicaid-covered users of alcoholism treatment services in the waiver period as compared to the baseline period. A substitution effect will be inferred if a relative increase in Medicare and Medicaid-covered clients in demonstration settings is accompanied by a decrease in the clients of hospital-based providers. A shift from nonreimbursed to reimbursed settings would be shown as an increase in the numbers of clients in hospital-based and/or freestanding demonstration sites with acorresponding decrease in the numbers of clients in nonreimbursed settings. An increase in the total number of Medicare and Medicaid-covered users due to the entry into the system of persons who would previously have remained untreated would not be accompanied by any apparent decrement in the number of clients for nonreimbursed providers.

Given that the data are nonexperimental, there may be unrelated concommitant trends in utilization that are confounded with those due to the demonstration. For example, without examining trends in utilization already occurring in the baseline period, a general increase in the numbers of persons receiving alcoholism treatment services that occurs because of increased public awareness may appear to be an expansion effect caused by the demonstration itself. The best approach for differentiating these two types of effects is to use time series data (rather than a single pretest and single posttest measure) to identify trends occurring extraneously to the demonstration itself. With this longitudinal time series design, the various, situations that could occur can be distinguished by different combinations of trend lines.

Units of Analysis/Data Requirements/Data Sources

For optimum operationalization of the above design, the basic requirement is that data cover all utilization of alcoholism treatment services by provider type in the baseline and waiver periods. Depending upon the data availability, the analysis may be either client or provider-based. A client design would calculate rates of use of alcoholism treatment services over time by provider type for all (or a representative sample of) Medicare and Medicaid beneficiaries in the relevant service area. Aside from a face-to-face survey, the only other potentially feasible source of data to address this is Medicare and Medicaid claims history data. These data do not represent nonreimbursed treatment for alcoholism, however, so that some of the possible effects of the demonstration would be difficult to distinguish.

Given the possible difficulties of identifying alcoholism treatment through secondary data; an alternative approach adopted for the study of utilization, cost and total health care costs is to use a provider-based sample of clients. Assuming the study covers the universe (or a representative sample) of providers, and these providers have accurate records of users over time, changes in user rates by provider type can be Identified just as accurately as if complete client level data were available. Since this approach involves primary data collection at the provider level, it is expensive. However, since this data collection

strategy is being adopted in two states to address other research questions, it is worthwhile to consider whether the same strategy may meet the data requirements of this research area.

Review of available data on client flow indicates that a two state substudy design is possible for Medicare clients (over 65) in all candidate states, but for Medicaid clients only in New Jersey. Moreover, considering the ways in which demonstration and canparison providers were selected; it will not be possible to develop precise quantitative estimates of substitution or expansion efforts, Nevertheless, substantial evidence concerning the dominant trends may be obtained. This can be supplemented with other analyses, which although not conclusive on their own may provide some fairly clearcut indications concerning changes in utilization patterns brought about by the demonstration. Two such analyses are planned -- one involving a study of treatment referral patterns of primary community referral sources, and the other involving indirect inferences from client level data obtained from client records and interviews during other portions of the study.

The above described analyses have referred only to the two state substudy. It is this substudy which provides detailed data on hospital-based sites and which allows access to treatment history data for clients of these sites. More 1 imited, but suggestive analyses can be carried out in all six states of the demonstration. These analyses would focus on aggregate client flow data for the freestanding demonstration and canparison providers (which as noted, are available only for Medicare clients in the baseline period). This set of analyses would differ from those of the two state substudy by ami tting data on hospital-based providers. As a consequence, only relative weak inferences will be possible as regards expansion or substitution effects and, although referral and treatment history data may help somewhat in clarifying probable effects, these types of data will be less detailed in the full set of six states.

Analytical Strategies

As in the analysis of total health care costs, the present design is a limited time series longitudinal design with nonequivalent comparison groups. Again the multivariate repreated measures analysis of covariance appears to be the most appropriate design for making use of the trend data as a control for any external historical events that may affect the use of alcoholism treatment services over time. In this case, the units of analysis are providers rather than clients, so that the number of observations is much more limited in this analysis than in that of total health care costs.

Study. Note

The issue of whether expanded alcoholism treatment coverage will "open the floodgates" to sharply increase utilization is an important one. What little experience exists in the private insurance arena, however, suggests that a substantial increase in utilization will not take place as a result of the HASD coverage. While the issue itself is important, the cost involved in directly testing for substitution and/or expansion effects are prohibitive in this study, given the intricacies of the demonstration program design. What

we have developed as a reasonable alternative, is a strategy which uses existing secondary data to suggest where substitution or expansion effects may be present. Consequently, the approach to this research area was specifically designed to require few resources for data compilation and analysis. Virtually all of the data needed will already be gathered for use in addressing other research questions. In essence, the study plan for examining substitution/expansion effects provides a low-cost opportunity to study the extent to which existing data systems can offer some insightto the auestion.

Research Priority #5: Changes in Provider Operations

An earlier section of this report discussed indicators of quality of care. Another potential area of impact of the demonstration is provider operations. That is, changes in operational aspects of treatment programs such as:

1. client mix,
2. service charges,
3. revenue sources for services, and
4. beneficiary awareness programs.

This research priority area is intended to be descriptive rather than analytical, as is the structural assessment canponent of quality of care. It draws information on client mix, service charges, revenue sources, and beneficiary awareness programs from secondary data sources and site visits to grantee states. The focus is on monitoring changes in provider operations and, as such, examines process influences of the demonstration which are less amenable to hypothesis testing.

1. Client Mix

Rationale. Independent of any absolute increase in service utilization among Medicare and Medicaid eligibles, we expect to see an increase in the proportion of Medicare and Medicaid clients to all clients in treatment over time in demonstration providers. Perhaps more significant is the likelihood that a substantial proportion of the client base currently being served by demonstration providers are presently Medicare and Medicaid eligible, but simply have not previously been a source of reimbursement for providers. Consequently, the initial upsurge in the proportion of Medicare and Medicaid clients to other clients may reflect a change in client reimbursement status among providers currently serving the elderly and low income. The main focus here is the change of that proportion over time during the demonstraton. Consequently, we expect that there will be an increase in the proportion of clients reimbursed by Medicare and Medicaid to total clients served by demonstration providers during the waiver period.

A number of variables relevant to client mix will be assessed. These variables include demographics such as age, gender and racial/ethnic group, and whether the client is Medicare or Medicaid eligible.

Changes in service utilization by Medicare and Medicaid clients and the strategies available to measure them were treated in the previous discussion under Research Priority #2. The extent to which increased utilization is a function of expansion or substitution effects was also discussed in an earlier section of this report. What is of interest here is possible change in the relative mix of clients in treatment among demonstration providers.

Analysis. The essential design for client mix demographic analysis examines change only among demonstration providers during the baseline and waiver periods. Comparable data from canparison freestanding providers will be used to check against the possibility that changes in client mix are related to influences other than the demonstration, if similar client profile changes also occur among comparison providers.

Relative to the expected changes in the proportion of total clients who are Medicare and Medicaid eligible, demonstration providers during the waiver period only are the focus for analysis. While it would be of interest to compare changes in the share of total clients represented by Medicare and Medicaid support between baseline and waiver periods, and between demonstration and comparison providers during those periods, we will be limited in our ability to positively identify Medicare and Medicaid recipients during the baseline period in demonstration and comparison providers. This will also be the case in canparison providers during the waiver period. It is possible to apply gross criteria of eligibility for Medicare and Medicaid against patient records of both sets of providers for the baseline period. However, this would be more costly than the value of the resultant information.

2. Service Charges

Rationale. Most demonstration providers have a fee schedule in place for the services they provide, although these fees are often not collected if the client's persona7 resources are limited. In fact, the majority of demonstration providers which operate with state funding typically serve clients who do not have the capacity to pay the full cost of treatment. The state grant or contract subsidized their treatment. With Medicare and Medicaid reimbursements coming into the picture, we will be interested in seeing what changes, if any, take place over time in the fee service schedules of demonstration providers.

Analysis. Descriptions of service charges prior to and subsequent to the waivers will be made between demonstration and canparison providers.

3. Sources of Program Revenue

Rationale. Regarding, sources of program revenue, the majority of the community-based alcoholism treatment providers have been financially dependent on state, Federal and local government funds over the past decade. Some have sought charitable contributions or established client fee structures as additional sources of revenue. However, most funding has been in the form of grants or contracts, and the funds were received on a regular basis. Only a handful of freestanding providers have ventured into the area of third-party funding such as private health insurance, Title XX or State or

local government fee for service. Third-party reimbursements demand that clients have certain eligibility requirements such as income restrictions, insurance coverage or other imposed criteria. Third-party payments also mean irregular payments based upon the number of eligible persons and the number of units of services provided to them. Some third-party sources take into account the amount and sources of other funds received by the provider when it is establishing the reimbursement rates.for services,

While many of these issues are not formal aspects of the HASD effort, they serve to illustrate how state specific policies can influence the outcome of the evaluation. These policies along with other exogenous sources of influence will need to be monitored carefully relative to the overall evaluation. To some extent, the comparison providers offer a degree of methodological control over such influences. However, insight gained through the site visits and ongoing awareness of policy trends in the alcoholism field will be important to gaining a true appreciation of the context within which the demonstration is operating.

Analysis. The design here calls for describing the pattern of revenue sour-amounts between the baseline and waiver periods for demonstration providers. This will also be done during the same periods between demonstration and cunparison providers.

4. Beneficiary Awareness Programs

Rationale. Each grantee state is required under the grant to develop and implement a beneficiary awareness program. There is considerable variability among states in these programs. Some providers have developed extensive and sophisticated strategies, while others have less formal awareness enhancement plans. Regardless of the form or scale of the awareness programs implemented by the providers, a formal assessment of their effectiveness is beyond the scope of this evaluation.

The relatively small scale of the HASD project itself suggests that beneficiary awareness programs will be relatively modest for the most part. As such, this evaluation will focus on the effectiveness of awareness programs as they result in enhanced awareness of primary referral agents regarding the demonstration. These referral sources (e.g., clergy, social service agencies, criminal justice system, and physicians) account for the majority of client flow through freestanding alcohol treatment centers, and could offer a significant return in client demand if targeted by the awareness programs.

Analysis. Description of the beneficiary awareness efforts will involve both state-level and provider-level activities. Materials used in these programs will be collected where possible, including pamphlets or other printed materials and texts of public service announcements. Information On the implementation of the beneficiary awareness programs will be assessed through two sources. The first of these is the quarterly report submitted by each grantee detailing the activities and progress of the demonstration. Any information or exhibits relevant to beneficiary awareness programs will be extracted from these reports. More indepth information will be obtained through discussions with grantee, provider, and referral agency staff during the annual site visits. It will be important to determine whether the

referral agents are aware of the demonstration services and the coverage provided by Medicare and Medicaid. The extent to which these agents change their referral behaviors toward demonstration providers will be indicator of beneficiary awareness program effectiveness.

Description of beneficiary awareness programs will be limited to grantees and demonstration providers. To the extent such programs bear similarities to marketing efforts of canparison or hospital-based providers, such similarities will be presented.

Research Priority #6: Reimbursement Methodology

Reimbursement for services rendered to all Medicare beneficiares by demonstration providers will be made on the basis of either reasonable cost subject to retrospective cost reimbursement, *or* prospective rates developed by ODR using Medicare reasonable cost criteria. In the first year of the demonstration, all demonstration providers (except in Illinois) will be reimbursed on the reasonable cost method subject to retrospective cost reimbursement. Thereafter, each will be given the option of being reimbursed on the prospective method utilizing prospective rates or continuing to be reimbursed on the retrospective method, but subject to cost limitations developed by ODR. Once a method is chosen, it will remain in effect for the entire fiscal year. During the subsequent years of the demonstration, the providers may elect retrospective cost reimbursement or prospective reimbursement. The latter will establish reasonable cost rates for applicable services and be considered payment in full for services provided.

The Illinois umbrella grantee requested a prospective method of reimbursement for the first year. Its demonstration providers will receive previously negotiated prospective rates as full and final payment for all services rendered to Medicare beneficiares. No year end final cost settlement will be required, as would be the case under the retrospective method.

Reimbursement under Medicaid is subject to the decisions of the state Medicaid agencies participating in the demonstration. Illinois and New York are establishing prospective rates which are different from the Medicare rates; whereas, Michigan and New Jersey are using the same rates for Medicaid reimbursement as are being used for Medicare. The issue of reimbursement methodology under Medicaid in Michigan and New Jersey is somewhat blurred since the alcoholism authority, not the Medicaid agency, is actually paying the state share of the Medicaid expenses.

This research priority is concerned with how prospective versus cost reimbursement methodologies might impact use and cost of services among, demonstration providers. *We* have no reason to believe that different reimbursement methods under the demonstration will directly influence the pattern or degree of service utilization among providers. More likely service costs will be sensitive to reimbursement approaches. Consequently, we will monitor changes in service costs over the three years of waiver coverage to see if systematic reductions or increases are associated with changes from cost reimbursement to prospective schemes. Direct care staff characteristics are also expected to be sensitive to these two forms of reimbursement. For

example, under a prospective model a provider could reduce its staff payroll costs (either by reducing staff or by using lesser paid personnel) to achieve a true cost per unit of service which is less than the negotiated fixed prospective rate.

Because providers are free to choose from year to year the method of Medicare reimbursement desired, it is not possible to structure a quasi-experimental design to address this priority area. We will have to defer to the selection process of providers before knowing the distribution of reimbursement methods in any given year of the demonstration. In the case of Medicaid reimbursement, it is likely that state-wide methods will be determined by the grantee rather than providing an option to providers. As stated previously, the four states with Medicaid participation are evenly split with Illinois and New York planning a prospective system and Michigan and New Jersey using a retrospective cost reimbursement method.

The methodology for this priority area is scheduled for completion during Phase II of the evaluation project. It will be guided by the two research questions (Q 6a and Q 6b) listed in Exhibit 1.